

ABSTRACT OF THE DISCLOSURE

A method for manufacturing a semiconductor device is capable of controlling amounts of protrusion of penetration electrodes (5) from a rear surface of a semiconductor substrate (4) in a easy and accurate manner. Recesses (11) are formed in a substrate proper (10) that has a semiconductor circuit (2) formed on one surface thereof, and an insulation film (8) is formed on an inner wall surface of each of the recesses (7). A conductive material is filled into the recesses (7) through the insulation films (8) to form embedded electrodes (15) that constitute the penetration electrodes (5). A rear side of the substrate proper (6) is removed until one end face of each of the embedded electrodes (15) is exposed, thereby to form the penetration electrodes (5). The rear surface of the substrate proper (6) is anodized to form an anodic oxide film (9), which is then removed by etching to form the semiconductor substrate (4).